

ANNALS OF NATURAL HISTORY.

XLI.—*The Fauna of Twizell.* By P. J. SELBY, Esq.,
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[Continued from the 'Magazine of Zoology and Botany,' vol. ii. p. 387.]

IN the 'Magazine of Zoology and Botany' the attention of naturalists was directed to the advantage that the zoology of our own islands could scarcely fail to derive from local Faunas, provided they were undertaken and conducted with accuracy and care; and an attempt was made to point out the precautions necessary to be observed in order to render such Faunas of the greatest possible utility to science. Upon a plan of the kind proposed, the investigation of a small district was undertaken by the writer, and lists of the animals, birds, reptiles and fishes* were given in a second communication in the same work, with a few observations upon the œconomy of such species as seemed to require additional notice. As a continuation of this Fauna may not be altogether useless or devoid of interest to some of the readers of the 'Annals of Natural History,' it is proposed to continue it at intervals so as to embrace the various divisions of the invertebrate animals.

In the present communication catalogues of the coleopterous and lepidopterous insects already found within the precincts of the district subjected to investigation are given; and, as these two divisions have been assiduously attended to for the last three years, it is expected that they contain a great majority of the species inhabiting the district, at the same time the writer is aware that many must have escaped his notice and search, particularly those of minute size, belonging to the *Nitidulidæ*, *Anisotomidæ*, &c., as well as those of rare occurrence in the groups of the *Pselaphidæ*, *Tachyporidæ*, *Stenidæ*, &c. The catalogue of the coleoptera, so far as they have been veri-

* In the list of fishes the eels were omitted; we have the two species *Anguilla acutirostris* and *latirostris*.

fied, enumerates upwards of six hundred species, being in the proportion of nearly one sixth to the whole of the British coleoptera contained in Stephens's Nomenclature, a list of tolerable extent, taking the small size of the district and its northern latitude into consideration. As might be expected, we find the list to be most deficient in those forms whose pabulum either in the larva or perfect state is wanting, or only to be found in very diminished quantity within the district, or in such insects as are restricted within distribution to the southern and warmer parts of the kingdom. Thus of the *Longicornes*, whose food in the larva state consists of wood in progress of decay, we only possess three species, two of which, *Leptura 4-fasciata* and *Rhagium inquisitor*, live upon the decayed trunks and roots of the birch, one of our indigenous trees; the other, the *Rhagium bifasciatum*, prefers the rotten fibre of the Scotch fir (*Pinus sylvestris*), though it is sometimes met with in the rotten sap or white wood of the oak. No example of the *Buprestidæ* has yet been detected, and the same may be added in regard to the *Tenebrionidæ*, *Melandryadæ**, *Ædemeridæ*, *Pyrochroidæ*, and a few other families. Of the *Pselaphidæ* only one species has yet been met with; but as the habits of these curious insects are very retired, others in all probability remain to be added, and this we also take to be the case with the *Tachyporidæ*, *Stenidæ*, and *Omalidæ*, in which our list is comparatively very deficient. In the first division, or Geodephagous beetles, we have species of the majority of the genera, and of those that are wanting some are inhabitants of maritime districts, or restricted by something peculiar in their œconomy to confined localities. The same may be said of the Hydradephagous division, as well as of the Phylhydrida and Necrophaga. Of the *Varicornes* or *Helocera*, examples of the genera *Cistela*, *Onthophilus* and *Hister* only have been met with, and among the *Lamellicornes* we possess no representatives of the *Lucanidæ*, *Scarabeoidæ*‡, *Trogidæ*, *Dunastydæ* or *Cetoniadæ*‡. Of the *Rhincophoræ* or *Curculionidæ* our

* *Lagria hirta*, belonging to this group, is common upon the coast near Bamburgh.

† *Ægialia globosa* occurs plentifully upon the sea coast.

‡ *Cetonia aurata* has however been met with in nearly the same parallel, having been taken by Dr. Greville in Galloway.

list boasts of a considerable number of generic forms as well as species, and if our researches extended to the coast several others might be added, such as *Cleonus sulcirostris*, *Philopodon geminatus*, and *plumbeus*, *Otiorhynchus tenebricosus*, &c. &c. Few species of the numerous genus *Apion* have been determined, but we have many more which require further investigation and are therefore not included in the list. *Cryptorhynchus Lapathi* has only once occurred, the larvæ were found in the stem of a black poplar, and were first detected by the sawdust produced by the grub, and which was observed protruding from the holes in the bark of the tree. Among the *Bostriçidæ* it will be observed that we have several species of the genus *Hylurgus*, and among them *Hyl. piniperda* and *H. ater*, insects which have been considered as very destructive and frequently the cause of the death of the *Pinus sylvestris*. Of the truth of this accusation we from the first entertained doubts, which further observations for several years past have fully confirmed, and we now feel convinced that the *Hylurgus* is not the cause of the decay or death of the plant, but that it is induced to deposit its eggs beneath the bark of the tree in consequence of a prior disease from some other cause, and which has brought it into that condition, in which it becomes the appropriate nidus or breeding receptacle of these insects. I have never found a healthy tree infected or attacked by them in the larva state, every instance having occurred in such as had previously shown decisive indications of ill health and decay, a fact plainly exhibited in the colour of their leaves and stunted growth. That they do some injury in the perfect state by boring into and eating away the internal part of the slender shoots in summer is not denied, but we never met with a plant so severely injured in this way as to be the cause of its death or indeed of any permanent injury. The catalogue of the *Lepidoptera* amounts at present to 370 species and upwards, or full one-fifth of the whole order recorded as British, and we think it not improbable from the number of species, particularly the smaller yet to be added, that the proportion may be increased to a fourth, an amount which would scarcely be expected in so limited a tract of country; had our confines however been extended a few miles further, so as to embrace

the coast and that tract of thin trap formation which prevails to such an extent round Bamburgh and Belford, several additions both of diurnal and nocturnal Lepidoptera might have been added to the list, amongst which may be noted *Sphinx Convolvuli*, *Hipparchia Semele*, *Polyommatus Artaxerxes*, *Agrotis lunigera*, *Heliothis Peltigera*, &c. Of the *Papilionidæ* it will be observed that *Pap. Machaon*, *Gonepteryx Rhamni*, the species of the genus *Colias* and *Pieris* do not reach so high a latitude, and the same holds good as to *Vanessa Polychloros* and *Antiopa*, *Apatura Iris*, and *Limenitis Camilla*. Among the *Nymphalidæ* no instances of *Hipparchia Galathea* and *Tithonus* have been found so far north, and though the *Thecla Rubi* possesses a more extensive geographical distribution, having been found by us upon the confines of Sutherland, it has not been detected in this neighbourhood. Of the beautiful genus *Polyommatus*, *P. Alexis* and *P. Alsus* are the only species found upon Twizell, and *Thymele Tages* (the only example we have of the *Hesperidæ*), though some years abundant, is confined to a particular field, where the *Lotus corniculatus*, the plant upon which the larva subsists, constitutes the principal herbage. Of the *Sphingidæ* we boast of the *Acherontia Atropos* and *Deilephila Galii*, the latter an insect of great rarity even in the south of England. *Deilephila Elpenor* has once occurred, and is one among the very few instances in which it has been met with in so northern a latitude. *Deil. Porcellus* is not uncommon, and it is sometimes bred from the larva which is found feeding upon the *Gallium verum*. The only species of the *Ægeriadæ* is the *Trochilium Crabroniforme*, whose larva is reared in the lower part of the trunks of the *Salix caprea*, and there is scarcely a tree of this species to be found that has not been bored by the caterpillar of this beautiful insect; it is probable also that another species is yet to be detected which breeds in the alder, a common tree upon the margin of our brooks, as specimens have been obtained by Sir William Jardine in Dumfries-shire, from trees on his plantations. Among the *Notodontidæ*, *Pterostoma palpina* and *Notodonta Dromedarius* have but rarely occurred, and the specimens we possess have mostly been reared from the larvæ. *Lasiocampa Rubi* abounds upon the heaths and adjoining

grassy fields, and in some autumns the caterpillars are seen in hundreds feeding upon the heath, willow, &c. It is, however, an insect we have rarely succeeded in rearing from the larva, as in despite of every attention they generally die before assuming the pupa state. The extensive list of the *Noctuidæ*, which amounts to 132 species, is to be attributed to the success which has attended our mode of enticing and securing them during their early nocturnal flight; this is effected by the free use of honey, smeared upon some receptacle which is placed in situations supposed to be favourable to the flight of the moths. An old bee-hive, or as it is called in the north 'a skep', is preferred to any other article, as it offers a larger surface, and from its circular form allows the moths when settled upon it to be easily captured by the flappers. By this device we have sometimes taken several dozen specimens in an evening, many of them considered of great rarity, and which but for this irresistible trap would probably have remained undiscovered; for although we had paid considerable attention to the nocturnal Lepidoptera before this plan was adopted, not a fourth part of the species had been obtained which a single season afterwards brought to light. But besides the certainty of attracting the various species of the *Noctuidæ* and affording in a good season an abundant supply of fine specimens for the cabinet, this plan is attended with other results, interesting as connected with their natural history; thus it shows the periods of duration of the various species, and the apparent influence which season has upon their longevity, as well as the general proportion of the sexes to each other. In summer and the early autumnal months we find that three weeks is about the average duration of a species, reckoning from the first appearance of the insect till it ceases to visit the honeyed skep, and as it does so in all appearance fresh from the chrysalis no mistake can be made. Later in autumn the time becomes extended, and the few species that fly in the milder evenings of the winter months continue to be taken from November to the end of February, as we have captured examples of *Calocampa exoleta*, *Glæa Satellitia* and *Glæa Vaccinii* during all the intermediate months. In March *Orthosia stabilis* appears, and is soon succeeded by *Semiophora gothica* and one or two-

others, which continue to the beginning of May, from which period till the 8th or 10th of June very few species of *Noctuidæ* are on wing; but the scene is changed as soon as midsummer approaches, as it is ushered in by a vast variety of forms, which come forth in rapid and daily succession. None of the *Sphingidæ* have yet been attracted by this device, nor have any of the *Bombycidæ* or other groups in which the cibarian organs are small and imperfectly developed been seen upon it. Many of the *Geometridæ* and *Tortricidæ* however have been captured, and among them some of our rarest species. The *Geometridæ* amount to nearly 100 species, and among these will be found several which have been considered as only locally distributed or rare. To this division several additions may be expected to be made, as also to those which follow it, as the same degree of attention has not yet been bestowed upon them which has been given to the larger though not more beautiful or extraordinary forms of these gems of nature.

A List of Coleopterous Insects taken upon the Twizell Estate.

I. Geodephaga.

1. CICINDELIDÆ.

C. campestris.

2. BRACHYNIDÆ.

Dromius linearis.

— *quadrimaculatus.*

— *fasciatus.*

— *agilis.*

— *melanocephalus.*

3. SCARITIDÆ.

Clivina fossor.

4. CARABIDÆ.

Cychrus rostratus.

Carabus catenulatus.

— *monilis.*

— *granulatus.*

— *violaceus.*

— *hortensis.*

— *nitens.*

Helobia brevicollis.

— *nivalis aut Gyllenhalii.*

Leistus fulvibarbis.

— *rufescens.*

5. HARPALIDÆ.

Loricera pilicornis.

Badister bipustulatus.

Anchomenus prasinus.

— *albipes.*

Platynus angusticollis.

Agonum parumpunctatum.

— *viduum.*

— *versutum.*

— *laeve.*

— *emarginatum.*

— *piceum.*

Calathus melanocephalus.

— *Cisteloides.*

— *mollis.*

Argutor pullus.

Pœcilus cupreus.

— *ruffemoratus.*

— *versicolor?*

Omaseus aterrimus?

— *nigrita.*

— *melanarius.*

Steropus madidus.

— *Ethiops?*

Stomis pumicatus.

Patrobus rufipes.

Platysma niger.

Amara lata.

— *similata.*

— *vulgaris.*

— *trivialis.*

— *plebeia.*

— *communis.*

— *familiaris.*

Bradytus apricarius.

Harpalus rufimanus.

Harpalus limbatus.
 — *æneus*.
 — *ruficornis*.
Ophonus puncticollis.
Trechus fulvus.
 — *collaris*.
 — *minutus*.
Blemus longicornis.

6. BEMBIDIADÆ.

Tachys binotatus.
 — *vittatus* ?
 — *immunis*.
 — *biguttatus*.
 — *Guttula*.
Peryphus femoratus.
 — *littoralis*.
 — *viridi-æneus*.
 — *agilis*.
 — *tibialis*.
Lopha 4-guttata.
Tachypus celer.
 — *properans*.
 — *chalceus*.
Bembidium paludosum.

7. ELAPHRIDÆ.

Notiophilus aquaticus.
 — *biguttatus*.
 — *palustris*.
Elaphrus cupreus.
 — *riparius*.

II. Hydradephaga.

1. DYTISCIDÆ.

Haliphus ferrugineus.
 — *lineato-collis*.
 — *ruficollis*.
Hygrotus inæqualis ?
 — *scitulus*.
 — *pictus*.
Hydroporus frater.
 — *depressus*.
 — *lineatus*.
 — *dorsalis*.
 — *6-pustulatus*.
 — *deplanatus*.
 — *melanocephalus*.
 — *erythrocephalus*.
 — *flavipes*.
 — *holosericeus* ?
 — *pubescens*.
 — *fuscatus*.
 — *piceus*.
Laccophilus interruptus.
Colymbetes fuscus.
 — *guttatus*.
 — *chalconotus*.
 — *maculatus*.
 — *2-pustulatus*.
 — *Sturmi*.

Ilybius fuliginosus.
 — *fenestratus*.
Dyticus punctulatus.
Acilius sulcatus.

2. GYRINIDÆ.

Gyrinus natator.

3. PARNIDÆ.

Parnus prolifericornis.

4. LIMNIIDÆ.

Elmis Volckmari.
 — *tuberculatus*.
 — *lacustris*.
 — *parallelipedus*.
 — *æneus*.

5. HELOPHORIDÆ.

Helophorus aquaticus.
 — *granularis*.
 — *griseus*.
 — *viridicollis*.
 — *fennicus*.
 — *nubilus*.
Enicocerus viridi-æneus.
 — *Gibsoni*.
Hydræna riparia.

6. HYDROPHILIDÆ.

Hydrobius fuscipes.
 — *chalconotus*.
 — *orbicularis*.
 — *2-punctatus*.
 — *Colon*.
 — *minutus*.

7. SPHERIDIIDÆ.

Cercyon littorale.
 — *apicale*.
 — *obsoletum*.
 — *piceum*.
 — *melanocephalum*.
 — *conspurcatum*.
 — *atomarium*.
 — *convexiusculum*.
 — *minutum*.
 — *quisquillum*.
Sphæridium scarabæoides.
 — *2-pustulatum*.

8. ANISOTOMIDÆ.

Leiodes testacea.
 — *ferruginea*.
 — *humeralis*.

III. Necrophaga.

1. SCAPHIDIDÆ.

Ptomaphagus truncatus.
Catops fornicatus.
 — *chrysomeloides*.

Catops Leachii?
Choleva angustata.

2. SILPHIDÆ.

Necrophorus Humator.
— vestigator.
— Mortuorum.
— Vespillo.
Necrodes littoralis.
Oiceoptoma rugosa.
Silpha obscura.
— tristis.
— nigrita.
— opaca.
Phosphuga atrata.

3. NITIDULIDÆ.

Nitidula discoidea.
— 2-pustulata.
— oblonga.
— æstiva.
Strongylus fervidus.
Campta lutea.
Meligethes viridescens.
— cœruleus.
— subrugosus?
— erythropus.
Cateretes Urticæ.
— nitidus.
— pedicularius.
Micropeplus porcatus.
— tesserula.

4. ENGIDÆ.

Trichopteryx atomaria.
— pusilla.
— minuta.
Atomaria castanea.
— ruficornis.
— atra.
Typhaea fumata?
Antherophagus pallens.
— silaceus.
Cryptophagus Populi.
— humeralis.
— fumatus.
— Ulicis.
— Abietis.
Byturus tomentosus.
Tetratoma Fungorum.
Ips ferruginea.
Rhyzophagus ferrugineus.
— cylindricus.
— rufus.
— dispar.
— 2-pustulatus.
Silvanus dentatus.
Corticaria crenulata.
Latridius lardarius.
— transversus.
— testaceus.
Dermestes vulpinus.

IV. Varicornes.

HELOCERA.

1. BYRRHIDÆ.

Byrrhus Pilula.
— sericeus.

2. HISTERIDÆ.

Onthophilus striatus.
Hister unicolor.
— cadaverinus.
— carbonarius.
— nitidulus.

LAMELLICORNES.

1. GEOTRUPIDÆ.

Geotrupes sylvaticus.
— punctato-striatus?
— stercorarius.

2. APHODIIDÆ.

Aphodius Fossor.
— hæmorrhoidalis
— fimetarius.
— scybalarius.
— ochraceus.
— terrestris.
— rufipes.
— nigripes.
— luridus.
— contaminatus.
— prodromus.
— sphacelatus.
— merdarius.

3. MELOLONTHIDÆ.

Serica brunnea.
Melolontha vulgaris.
Phyllopertha horticola.

STERNOXI.

4. ELATERIDÆ.

Cataphagus limbatus.
— acuminatus.
Dolopius marginatus.
Agriotes sputator.
— obscurus.
— lineatus?
Limoniis aterrimus.
Hypnoidus riparius.
— rivularis.
Clenicerus cupreus.
Caloderus Equiseti.
Aplotarsus testaceus.
— rufipes.
Athöus niger.
— nigrinus.
— hæmorrhoidalis.
— elongatus.
— subfuscus.
— vittatus.
— angularis.
Campylus linearis.

MALACODERMA.

1. CEBRIONIDÆ.

Atopa cervina.

2. CYPHONIDÆ.

Cyphon melanurus.

- *assimilis*.
- *obscurus*.
- *marginatus*.
- *griseus*.
- *immunis*.

Lampyris noctiluca.

3. TELEPHORIDÆ.

Telephorus ater.

- *flavilabris*.
- *testaceus*.
- *pallidus*.
- *melanurus*.
- *pilosus*.
- *nigricans*.
- *pellucidus*.
- *rusticus* } one species.
- *lividus* }
- *litratus?*
- *bicolor*.

4. TILLIDÆ.

Necrobia quadra.

5. PTINIDÆ.

Ptinus germanus?

- *6-punctatus*.
- *Fur*.
- *crenatus*.
- Anobium castaneum*.
- *striatum*.
- *molle*.
- *Abietis*.
- *Boleti*.

6. BOSTRICIDÆ.

Hylesinus Fraxini.

Hylurgus piniperda.

- *ater*.
- *angustatus*.
- *rufus*.
- *rhododactylus*.

V. Helminthomorpha.

RHINCOPHORA.

1. CURCULIONIDÆ.

Cionus Scrophulariæ.

Ceutorhynchus melanocephalus.

- *Geranii*.
- *didymus*.
- *guttula*.
- Nedyus assimilis*.
- *obstrictus*.
- *Erysimi*.
- *chloropterus*.
- *contractus*.
- *floralis*.

Nedyus pollinarius.

— *Troglodytes*.

Rhinonchus Pericarpus.

Cryptorhynchus Lapatii.

Orchestes Quercus.

— *Calcar*.

Tachyerges Saliceti.

Anthonomus fasciatus.

Hydronomus Alismatis.

Grypидius Equiseti.

Erirehinus Arundineti.

Notaris acridulus.

— *2-maculatus*.

Dorytomus Tortrix.

— *melanophthalmus*.

— *majalis*.

Procas picipes.

Orthochaetes setiger.

Hypera punctata.

— *Polygoni*.

— *Arator*.

— *canescens*.

— *picornis*.

— *Pollux*.

— *murina*.

— *nigrirostris*.

— *Plantaginis*.

— *hæmorrhoidalis*.

— *elongata*.

Ellescus 2-punctatus.

Leiosoma punctata.

Hylobius Abietis.

Alophus 3-guttatus.

Barynotus Mercurialis.

Merionus obscurus.

— *elevatus*.

Leiophlœus nubilus.

Otiorhynchus sulcatus.

— *notatus*.

— *ovatus*.

— *tenebricosus*.

— *caliginosus*.

— *piceus*.

— *scabrosus*.

— *scabridus*.

— *rugicollis*.

— *raucus*.

Philopedon geminatus.

Strophosomus Coryli.

— *squamulatus*.

Sciaphilus muricatus.

Brachysomus hirsutulus.

Sitona Ulicis,

— *Spartii*,

— *femoralis*,

— *hispidula*.

— *lineata*.

— *grisea?*

— *ruficlavis*.

— *canina*,

— *flavescens*,

— *puncticollis*,

} one species.

} one species.

Sitona tibialis.
 — humeralis.
 — Pisi.
 — crinita.
 — lineella.
Polydrusus cervinus.
 — undatus.
Nemoicus oblongus.
Phyllobius Pyri.
 — Alneti.
 — maculicornis.
 — argentatus.
 — Mali.
 — uniformis.
 — parvulus.
 — viridicollis.
Tanymecus palliatus.
Apion Pomonæ.
 — Limonii.
 — Spartii.
 — curtirostre.
 — violaceum.
 — velox.
 — sanguineum.
 — hæmatodes.
 — bifoveolatum.
 — Radiolus.
 — æneum.
 — Pisi.
 — pallipes.
 — flavipes.
 — assimile.
 — æstivum.
 — subsulcatum.
 — punctigerum.
 — vorax.
 — virens.
 — foveolatum.
 — intrusum.
 — nigrিতarse.
Oxystoma Ulicis.
 — Betulæ.
 — cupreus.
 — curculionoides.

2. SALPINGIDÆ.

Salpingus ruficollis.
 — planirostris.
Sphæriestes ater.

LONGICORNES.

1. CERAMBYCIDÆ.

Clytus Arietis.

2. LEPTURIDÆ.

Rhagium inquisitor.
 — bifasciatum.
Leptura 4-fasciata.

VI. Anoplurimorpha.

EUPODA.

1. CRIOCERIDÆ.

Donacia Proteus.

Donacia linearis.
Crioceris cyanella.
 — obscura.
 — melanopa.

CYCLICA.

1. GALERUCIDÆ.

Galeruca Tanaceti.
 — Caprea.
 — Cratægi.
 — Nymphae.
 — Calmariensis.
 — Lythri.
 — lineola.
 — tenella.
Luperus rufipes.
 — flavipes.
Haltica Nemorum.
 — nigro-ænea.
 — cærulea.
 — Pseudacori.
 — striatula.
 — brunnicornis.
 — ferruginea.
 — flava.
 — rufipes.
 — Helxines.
 — oleracea.
 — indigacea.

Thyamis tabida.

— atricilla.
 — picipes.
 — atriceps.
 — Nasturtii.
 — fuscicollis.
 — livida.
 — castanea.
 — læta.
 — parvula.
 — Pulex.
 — Holsatica.

Macrocnema Hyoscyami.

— Napi.
 — apicalis.
 — picina.

Mantura semi-ænea.
 — ænea.

Chaetocnema concinna.

Sphaeroderma testacea.

— Cardui.

Mniophila Muscorum.

2. CHRYSOMELIDÆ.

Phædon Armoraciæ.

— Betulæ.
 — tumidula.
 — aucta.
 — marginella.
 — Vitellinæ.
 — unicolor.
 — Polygoni.
 — fastuosa.

Chrysomela pallida.
 — *Litura*.
 — *marginata*.
 — *Staphylæa*.
 — *polita*.
Helodes Phellandrii.
 — *Beccabungæ*.

3. CASSIDIIDÆ.

Cassida rubiginosa.
 — *equestris*.

TRIMERI.

1. COCCINELLIDÆ.

Chilochorus 2-pustulatus.
Coccinella 12-punctata.
 — *14-punctata*.
 — *10-guttata*.
 — *oblongo-guttata*.
 — *ocellata*.
 — *7-punctata*.
 — *22-punctata*.
 — *variabilis*.
 — *dispar*.
 — *11-punctata*.
 — *18-guttata*.
 — *13-punctata*.
Rhyzobius Litura.
Cacicula pectoralis.
 — *scutellata*.

2. ENDOMYCHIDÆ.

Endomychus coccineus.

VII. Heteromera.

1. BLAPSIDÆ.

Blaps mortisaga.
Cistela castanea.
 — *murina*.
 — *maura*?

2. MORDELIDÆ.

Anaspis ruficollis.
 — *melanopa*.
 — *pallida*.
 — *fasciata*.

3. CANTHARIDÆ.

Proscarabæus vulgaris.

4. NOTOXIDÆ.

Anthicus fuscus.

VIII. Brachelytra.

1. TACHYPORIDÆ.

Autalia impressa.
Zyras Haworthii?
Bolitochara lunulata.
 — *tricolor*.
 — *nigripalpis*.
 — *corticalis*.
 — *nigrofusca*.

Bolitochara cinnomomea.
 — *atriceps*.

Aleochara concolor.

— *2-punctata*.

— *fuscipes*.

Megacronus merdarius.

Mycetoporus splendens.

Bolitobius atricapillus.

— *3-maculatus*.

— *apicalis*.

— *2-guttatus*.

Tachyporus nitidus.

— *atriceps*.

— *nigripennis*.

— *chrysomelinus*.

— *marginellus*.

— *obtusus*.

— *analis*.

— *marginatus*.

— *nitidulus*.

— *Hypnorum*.

— *lateralis*.

Cypha rufipes.

Tachinus Silphoides.

— *collaris*.

— *marginellus*.

— *brunnipennis*.

— *apicalis*.

— *rufipes*.

— *cinctus*.

— *subterraneus*.

— *aterrimus*.

— *elongatus*.

2. STAPHYLINIDÆ.

Creophilus maxillosus.

Trichoderma nebulosa.

— *murina*.

Staphylinus erythropterus.

— *castanopterus*.

— *stercorarius*.

— *æriceps*.

— *æneocephalus*.

— *Cantianus*?

Goerius olens.

Ocypus similis.

— *picipes*.

— *compressus*.

Tasgius rufipes.

Quedius tristis.

— *pivicornis*.

— *lateralis*.

— *hæmopterus*.

— *impressus*.

— *rufitarsis*.

— *piceopennis*.

— *caliginosus*.

Philonthus laminatus.

— *splendens*.

— *ætatus*.

— *puncticollis*.

— *politus*.

Philonthus cognatus.
 — melanopterus.
 — microcephalus.
 — maculicornis.
 — decorus.
 — carbonarius.
 — pilipes?
 — chalcopterus.
 — fimetarius.
 — subfuscus.
 — marginatus?
 — varians.
 — intaminatus.
 — rubripennis.
 — sanguinolentus.
 — micans.
 — Watsoni?
 — punctus.
 Bisnius cephalotes.
 — rotundiceps.
 — simplex.
 Gabrius suaveolens.
 — pygmæus.
 — pallipes.
 Othius fulgidus.
 — alternans.
 — glabricornis.
 — angustus.
 Gyrohypnus longicollis.
 — cruentatus.
 — affinis.
 — tricolor.
 — linearis.
 — punctulatus.

Gyrohypnus parumpunctatus.
 Lathrobium brunnipes.
 — atriceps.
 — rufipenne.
 Cryptobium fracticorne.

3. STENIDÆ.

Stenus oculatus.
 — nigriclavus.
 — unicolor.
 — picipes.
 — circularis.
 — nitidiusculus.
 — subrugosus.
 — tenuicornis.
 — Aceris.
 — brunnipes.
 — pubescens.
 — punctatissimus.
 — melanarius.
 — nitidus.
 — pusillus.
 — bipunctatus.
 Platystethus morsitans.
 Oxytelus rugosus.
 — fuscipennis.
 — sculpturatus.
 — depressus.

4. OMALIDÆ.

Anthobium Sorbi.
 — tectum.
 Lesteva caraboides.
 — obscura.
 Omalium cæsum.

List of Lepidopterous Insects taken upon the Twizell Estate.

PAPILIONIDÆ.

Pontia Brassicæ.
 — Rapæ.
 — Napi.
 — Sabellicæ.
 — Cardamines.
 Argynnis Aglaia.
 Vanessa Urticæ.
 — Io.
 — Atalanta.
 Cynthia Cardui.
 Hipparchia Egeria.
 — Megæra.
 — Janira.
 — Hyperanthus.
 — Pamphilus.
 Lycæna Phlæas.
 Polyommatus Alexis.
 Thymele Tages.

ZYGÆNIDÆ.

Anthrocera Filipendulæ.

SPHINGIDÆ.

Smerinthus Populi.

Acherontia Atropos.
 Deilephila Galii.
 — Elphenor.
 — Porcellus.

SESIADÆ.

Macroglossa Stellatarum.

EGERIADÆ.

Trochilium Crabroniforme.

HEPIALIDÆ.

Hepialus Hectus.
 — Lupulinus.
 — Humuli.
 — Velleda.
 — carnus,
 — sylvinus.

NOTODONTIDÆ.

Pygæra bucephala.
 Clostera reclusa.
 Episema cœruleocephala.
 Cerura Vinula.
 Notodonta ziczac.

Notodonta Dromedarius.
 Leiocampa Dictæa.
 Ptilodontis palpina.
 Lophopteryx Camelina.

BOMBYCIDÆ.

Saturnia Pavonia.
 Lasiocampa Rubi.
 — Roboris.
 Eriogaster Lanestris.
 Odonestis Potatoria.

ARCTIIDÆ.

Demas Coryli.
 Orgyia antiqua.
 Lælia Salicis.
 Euthemonia Russula.
 Arctia Caja.
 Nemeophila Plantaginis.
 Spilosoma Menthastri.

LITHOSIIDÆ.

Callimorpha Jacobææ.
 Lithosia griseola.

NOCTUIDÆ.

Triphæna orbona.
 — subæqua?
 — pronuba *et* innuba (1 species).
 — fimbria.
 — Janthina.
 Cerigo texta.
 Lytea umbrosa.
 Charæas fusca.
 — nigra.
 — graminis.
 — corticea.
 — æqua?
 — segetum.
 — suffusa.
 — sagittifera.
 — vitta.
 — Tritici.
 — Hortorum.
 — nigricans.
 — exclamationis.
 Graphiphora pyrophila.
 — Augur.
 — brunnea.
 — baja.
 — festiva.
 — C. nigrum.
 — plecta.
 Semiophora Gothica.
 Orthosia sparsa.
 — stabilis.
 — miniosa?
 — litura.
 — limosa.
 — lota.
 — flavilinea.
 — macilentata.

Othosia Upsilon.
 Mythimna grisea.
 — conigera.
 Grammesia trilinea.
 — bilinea.
 Segetia Zanthographa.
 — neglecta.
 Caradrina Alsines.
 — implexa *et* lævis.
 — Sepii?
 — Cubicularis.
 — superstes.
 — glareosa.
 Glæa rubricosa.
 — Vaccinii.
 — spadicea.
 — Satellitia.
 Pyrophila Tragopogonis.
 — tetra?
 Nænia typica.
 Calocampa exoleta.
 Xylophasia lithoxylea.
 — sublustris.
 — rurea.
 — polyodon.
 — combusta.
 Hadenæ adusta.
 — satura?
 — remissa.
 — Thalassina.
 — Genistæ.
 — Plebeia.
 — Capsincola.
 Heliophobus popularis.
 Mamestra Pisi.
 — oleracea.
 — Suasa.
 — Brassicæ.
 — Chenopodii.
 Euplexia leucipara.
 Hama aliena.
 — basilinea.
 Apamea nictitans.
 — secalina.
 — didyma.
 — oculea.
 — I. niger.
 — furca.
 — Ophiogramma.
 Miana literosa.
 — strigilis.
 — Æthiops?
 — humeralis.
 — rufuncula.
 — minima.
 Scotophila Porphyrea.
 Miselia Oxyacanthæ.
 — aprilina.
 — compta.
 Polia binaculosa.
 — occulta.
 — herbida.

Polia Chi.

Acronycta Psi.

— Menyanthesdis.

— Rumicis.

— Euphorbiae ?

Thyatira Batis.

Calyptra libatrix.

Bombycia Viminalis.

Xanthia fulvago.

— flavago.

— gilvago.

Gortyna micacea.

Leucania Comma.

— impura.

— arcuata.

— pallens.

— ochracea.

— pallida.

— neurica.

Phlogophora Meticulosa.

Cucullia Tanacetii.

— lucifuga.

— Absinthii.

Abrostola Urticae.

Plusia Iota.

— percontationis.

— Gamma.

— circumflexa ?

— chrysisis.

— Festucae.

Mormo Maura.

Euclidia Mi.

— glyphica.

GEOMETRIDÆ.

Bupalus Piniarius.

Fidonia atomaria.

— carbonaria.

Anisopteryx leucophæaria.

Hybernia capreolaria.

Lampetia prosapiaria.

— defoliaria.

Biston Betularius.

Himera pennaria.

Crocallis elinguaris.

Odontopera bidentaria.

Geometra illunaria.

Rumia Cratægata.

Campæa margaritaria.

Ellopiæ fasciaria.

Aleis repandaria et muraria (1 species.)

Italia Vauaria.

Numeria pulveraria.

Cabera pusaria.

— rotundaria.

Ephyra pendularia.

Larentia cervinata.

— Chenopodiata.

— bipunctaria.

Cidaria Didymata.

— munitata.

— unidentaria.

Cidaria latentaria.

— salicata.

— Miaria.

— olivata.

— montanata.

— fluctuata.

Harpalyce fulvata.

— ocellata.

— tristata.

— subtristata.

— biangulata.

— silaceata.

— Corylata.

Polyphasia immanata.

— amcnata.

— marmorata.

— concinnata.

— comma-notata.

— centum-notata.

Steganolophia Prunata.

Lampropteryx suffumata.

— badiata.

Anticlea derivata.

Electra comitata.

— populata.

— testata.

— Achatma.

— Pyraliata.

Anaitis præformata.

Abraxas Grossulariata.

Melanippe hastata.

Zerene rubiginata.

Euthalia miata.

— Psittacata.

— impluviata.

— elutata.

Lozogramma petraris.

Triphosa cinereata.

Campptogramma bilineata.

Chesias Spartiata.

Thera simulata.

— variata.

— fulvata.

Oporabia dilutata.

Cheimatobia brumata.

— rupicapraris.

Eupithecia rectangulata.

— exigua.

— abbreviata.

— albipunctata.

— innotata.

Minoa Charophyllata.

Emmelesia decolorata.

— rivularis.

— albulata.

Ptychopoda dilutaria.

— cinereata.

— immutata.

Acidalia inornata.

— aversata.

— remutata.

— lactata.

